

Notice of Allowability

Application No.

10/066,643

Examiner

Alexander O Williams

Applicant(s)

KELLAR ET AL.

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Response filed 6/14/04.
2. ☒ The allowed claim(s) is/are 1-7 and 15-20; renumbered 1-7 and 8-13 respectively.
3. ☒ The drawings filed on 06 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

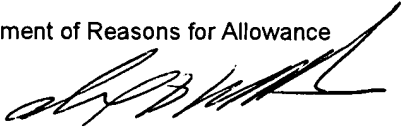
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


ALEXANDER O. WILLIAMS
PRIMARY EXAMINER

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Serial Number: 10/0666643 Attorney's Docket #: 42P12752

Filing Date: 2/6/2002;

Applicant: Kellar et al.

Examiner: Alexander Williams

Applicant's Response (filed 6/14/04) is acknowledged.

Claims 1 to 7 and 15 to 20 are allowable over the prior art of record.

This application contains claims 8 to 14 drawn to an invention non-elected without traverse.

Now that the claims have been allowed, Applicant is formal drawings corresponding to the informal drawings filed, which have been approved by Examiner. In order to a this application, correction is required in reply to the Office Action. The correction will not be held in abeyance.

Part III EXAMINER'S AMENDMENT

1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

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Authorization for this examiner's amendment was given in a telephone interview with Jay Beale on 8/19/04.

2. The application has been amended as follows:

In the Title

Delete the current title of "WAFER BONDING FOR 3-D INTEGRATION" and change to --Wafer Bonding Using a Flexible Bladder Press and Thinned Wafers for Three-dimensional (3D) Wafer-to-Wafer Vertical Stack Integration, and Application Thereof--.

In the Specification

Page 6, line 3: replace "glue" with --glues--.

Page 6, line 3: replace "adhesive" with --adhesives--.

Page 6, line 12: replace "100" with -- 110--.

Page 6, line 14: replace "Aluminum" with --aluminum--.

Page 6, line 15: replace "Copper" with --copper--.

Page 7, line 16: replace "Copper" with --copper--.

Page 10, line 2: replace "Chemical Mechanical Polish" with --chemical-mechanical polishing--.

In the Claims

Claim 2, line 2: replace "Copper" with --copper--.

Claim 2, line 2: replace "surface" with --surfaces--.

Please cancel non-elected claims without traverse claim 8-14.

REASON FOR ALLOWANCE

3. The following is an Examiner's Statement of Reasons for Allowance:

As to independent claims 1 and 15, the prior art of record fails to show the combination recited in any of the claims. In particular, the prior art of record fails to show or collectively teach a system using the first wafer pressed against the second wafer using a flexible bladder press. Applicant's arguments provide reason for allowance.

The closest prior art is by Eldridge (6,468,098). Eldridge in his teachings "Electrical Contractor Especially Wafer Level Contactor Using Fluid Pressure" uses a flexible wiring structure having a plurality of first contact elements and a fluid containing

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structure which is coupled to the flexible wiring structure which, when filled with liquid, presses the flexible wiring layer towards a device or substrate under test and by causing a pressure differential between the first side and a second side of the flexible wiring structure causes a plurality of contact terminals of varying height to electrically connect.

Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably **accompany** the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Field of Search	Date
U.S. Class and subclass: 257/E21.519,E21.505-E21.515,688,777,686,618,723,777, 778, 738,737,777,778,797,785 156/59 438/108,109,117,119,690 702/1+ 703/1+ 705/1+	1/19/04 8/19/04
Other Documentation: foreign patents and literature in 257/E21.519,E21.505- E21.515, 688,777,686,618,723,777,778,738,737, 777,778, 797,785 156/59 438/108,109,117,119,690 702/1+ 703/1+ 705/1+	1/19/04 8/19/04
Electronic data base(s): U.S. Patents EAST	1/19/04 8/19/04

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AOW
8/19/04

A handwritten signature in black ink, appearing to read 'AOW', with a stylized flourish extending from the end.

Primary Patent Examiner
Alexander O. Williams